CLAIM LISTING

There are no claim amendments submitted with this response.

Claim 1. (Previously Presented) A method of reducing photoaging in a mammal, comprising administering to the epidermis of the mammal a composition comprising an effective amount of at least one DNA oligonucleotide, wherein said oligonucleotide is approximately 2-200 nucleotides in length, and wherein the oligonucleotide comprises a phosphodiester backbone.

Claim 2. (Previously Presented) The method of Claim 1, wherein said oligonucleotide consists of a nucleotide sequence or a portion of a sequence selected from the group consisting of SEQ ID NOs: 1, 2, 3, 4, 5, 6, 8 and 11.

Claim 3. (Original) The method of Claim 1, wherein said oligonucleotide is single-stranded.

Claim 4. (Previously Presented) The method of Claim 1, wherein the oligonucleotide comprises a 5' phosphate.

Claim 5. (Original) The method of Claim 1, wherein said oligonucleotide is at a concentration of about 1 μM to about 500 μM.

Claim 6. (Previously Presented) The method of Claim 1, wherein the oligonucleotide comprises a physiologically acceptable carrier.

Claim 7. (Previously Presented) A method of increasing melanin production in epidermal melanocytes of a mammal, said method comprising topically administering to said epidermal melanocytes an effective amount of a composition comprising at least one oligonucleotide, wherein the oligonucleotide has a phosphodiester backbone, and wherein the

oligonucleotide has a nucleotide sequence consisting of SEQ ID NO:5, SEQ ID NO:3, or SEQ ID NO: 11.

Claim 8. (Previously Presented) The method of Claim 7, wherein said oligonucleotide has a nucleotide sequence consisting of SEQ ID NO: 5 or a portion thereof.

Claim 9. (Original) The method of Claim 7, wherein the oligonucleotide is single-stranded.

Claim 10. (Original) The method of Claim 7, wherein the oligonucleotide comprises a 5' phosphate.

Claim 11. (Original) The method of Claim 7, wherein the oligonucleotide is at a concentration of about 1 μM to about 500 μM.

Claim 12. (Cancelled)

Claim 13. (Previously Presented) The method of Claim 7, wherein the composition comprises a physiologically acceptable carrier.

Claim 14. (Previously Presented) A method of increasing melanin production in epidermal melanocytes of a mammal, comprising topically administering the epidermal melanocytes an effective amount of at least one oligonucleotide having a phosphodiester backbone, wherein the oligonucleotide consists of at least one sequence selected from the group consisting of: pTpT, SEQ ID NO: 1, SEQ ID NO:3, SEQ ID NO:5, and SEQ ID NO:11.

Claim 15. (Original) The method of Claim 14, wherein the oligonucleotide is single-stranded.

Claim 16. (Original) The method of Claim 14, wherein the oligonucleotide comprises a 5' phosphate.

Claim 17. (Original) The method of Claim 14, wherein the oligonucleotide is at a concentration of about 1 μM to about 500 μM.

Claim 18. (Cancelled)

Claim 19. (Previously Presented) The method of Claim 14, wherein the composition comprises a physiologically acceptable carrier.

Claim 20. (Previously Presented) A method of increasing DNA repair in epithelial cells, comprising applying directly to said cells an effective amount of a composition comprising pTpT.

Claims 21-22. (Cancelled)

Claim 23. (Previously Presented) The method of Claim 20, wherein the pTpT is at a concentration of about 1 μM to about 500 μM.

Claim 24. (Cancelled)

Claim 25. (Previously Presented) The method of Claim 20, wherein the composition comprises a physiologically acceptable carrier.

Claim 26. (Previously Presented) A method of inhibiting proliferation of epithelial cells, comprising topically administering to said cells an effective amount of a composition comprising pTpT.

Claims 27-28. (Cancelled)

Claim 29. (Previously Presented) The method of Claim 26, wherein the pTpT is at a concentration of about 1 μM to about 500 μM.

Claims 30-31. (Cancelled)

Claim 32. (Previously Presented) The method of Claim 26, wherein the composition comprises a physiologically acceptable carrier.

Claims 33-50. (Cancelled)

Claim 51. (Previously Presented) A composition comprising at least one oligonucleotide, said oligonucleotide having a phosphodiester backbone, and a physiologically acceptable carrier, wherein at least one said oligonucleotide has an oligonucleotide sequence consisting of SEQ ID NO: 5 and wherein said composition is suitable for medicinal or cosmetic use.

Claim 52. (Previously Presented) The composition of Claim 51, wherein at least one said oligonucleotide comprises a 5' phosphate.

Claims 53-56. (Cancelled)

Claim 57. (Previously Presented) A composition comprising at least one oligonucleotide, said oligonucleotide comprising a phosphodiester backbone, and a physiologically acceptable carrier, wherein at least one said oligonucleotide has a nucleotide sequence consisting of SEQ ID NO:3 and wherein said composition is suitable for medicinal or cosmetic use.

Claim 58. (Previously Presented) The composition of Claim 57, wherein at least one said oligonucleotide comprises a 5' phosphate.

Claims 59-68. (Cancelled)

Claim 69. (Previously Presented) A composition comprising at least one oligonucleotide, said oligonucleotide comprising a phosphodiester backbone, and a physiologically acceptable carrier, wherein at least one said oligonucleotide has a nucleotide sequence consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3 or SEQ ID NO: 4, and wherein at least one said

oligonucleotide comprises a 5' phosphate, and wherein said composition is suitable for medicinal or cosmetic use.

Claim 70. (Cancelled)

Claim 71. (Previously Presented) A method of increasing p53 activity in epidermal cells of a mammal, said method comprising topically administering an effective amount of $d(pT)_2$, or an oligonucleotide having a nucleotide sequence consisting of SEQ ID NO: 1 or SEQ ID NO:6 to said cells.

Claim 72. (Previously Presented) The method of Claim 71 wherein activation of p53 results in nucleotide excision repair in the cell.

Claims 73-74. (Cancelled)

Claim 75. (Previously Presented) A method of treating hyperproliferative disease affecting epithelial cells in a mammal, comprising directly administering to the epithelial cells an effective amount of a composition comprising at least one DNA oligonucleotide comprising a phosphodiester backbone, wherein the oligonucleotide has a nucleotide sequence consisting of SEQ ID NO: 1, SEQ ID NO:6 or pTpT.

Claim 76. (Previously Presented) The method of Claim 75, wherein pTpT is ultraviolet-irradiated.

Claim 77. (Previously Presented) The method of Claim 75, wherein an effective amount of said composition is administered in a delivery vehicle.

Claim 78. (Previously Presented) The method of Claim 77, wherein the delivery vehicle comprises liposomes.

Claim 79. (Previously Presented) The method of Claim 77, wherein the delivery vehicle comprises propylene glycol.

Claim 80. (Cancelled)

Claim 81. (Previously Presented) The method of Claim 75, wherein an effective amount of said composition is administered by aerosol.

Claim 82. (Previously Presented) The method of Claim 75, wherein the mammal is a human.

Claim 83. (Previously Presented) The method of Claim 75, wherein the epithelial cells are carcinoma cells.

Claim 84. (Cancelled)

Claim 85. (Previously Presented) A method of inhibiting proliferation of skin cells in a mammal, comprising administering topically to the skin cells an effective amount of a composition selected from the group consisting of deoxynucleotides, DNA dinucleotides, DNA dinucleotide dimers and any of the foregoing combinations thereof.

Claim 86. (Previously Presented) A method of inhibiting or reducing DNA damage in epidermal cells of a mammal, wherein said DNA damage is caused by UV irradiation, said method comprising topically administering to the cells in the mammal an effective amount of a composition comprising DNA fragments that are approximately 2-200 nucleotides in length, the DNA fragments being selected from the group consisting of: single-stranded DNA fragments, deoxynucleotides, dinucleotides, dinucleotide dimers and combinations thereof.

Claim 87. (Cancelled)

Claim 88. (Previously Presented) A method of inhibiting growth of malignant cells in a mammal, comprising directly administering to said cells an effective amount of DNA fragments that comprise a phosphodiester backbone and are about 2-200 nucleotides in length, the DNA fragments being selected from the group consisting of: single-stranded DNA fragments, deoxynucleotides, DNA dinucleotides, DNA dinucleotide dimers and a combination of any of the foregoing.

Claim 89. (Previously Presented) The method of Claim 85, wherein said skin cells are selected from the group consisting of: epithelial cells, melanocytes, keratinocytes and fibroblasts.

Claims 90-92. (Cancelled)

Claim 93. (Previously Presented) A method of increasing melanin production in epidermal cells of a mammal, said method comprising topically administering to said cells an effective amount of a composition comprising at least one single-stranded oligonucleotide, wherein the oligonucleotide has a phosphodiester backbone, and wherein the oligonucleotide consists of SEQ ID NO: 11, SEQ ID NO:1, pTpT, SEQ ID NO:5 or a functional fragment of SEQ ID No:5.

Claim 94. (Previously Presented) A method of increasing DNA repair in skin of a mammal, comprising topically administering to the skin an effective amount of a composition comprising pTpT or an oligonucleotide having a nucleotide sequence consisting of SEQ ID NO: 1.

Claim 95. (Previously Presented) A method of inhibiting growth of malignant skin cells of a mammal, said method comprising topically administering to said cells an effective amount of pTpT.

Claim 96. (Cancelled)

Claim 97. (Cancelled)

Claim 98. (Previously Presented) The method of Claim 86, wherein the composition comprises pTpT or a single-stranded DNA fragment having a nucleotide sequence consisting of SEQ ID NO: 1 with a 5' phosphate.

Claim 99. (Previously Presented) A method of inhibiting the growth of cells in a mammal, comprising directly administering to the cells of the mammal an effective amount of pTpT.

Claim 100. (Previously Presented) A method of inhibiting proliferation of epithelial cells, comprising directly administering to said cells an effective amount of a composition comprising pTpT.

Claim 101. (Previously Presented) A method of inhibiting proliferation of skin cells in a mammal, comprising administering topically to the skin an effective amount of a composition comprising at least one oligonucleotide having a DNA sequence consisting of pTpT or SEQ ID NO:1.

Claim 102. (Previously Presented) A method of inhibiting proliferation of skin cells in a mammal, comprising administering topically to the skin of the mammal an effective amount of a composition comprising pTpT.

Claim 103. (Previously Presented) The method of Claim 102, wherein said skin cells are selected from the group consisting of: melanocytes, keratinocytes and fibroblasts.

Claim 104. (Previously Presented) A method of inhibiting growth of skin cells in a mammal, comprising administering to skin of the mammal an oligonucleotide

having a nucleotide sequence consisting of pTpT, SEQ ID NO:1 or SEQ ID NO:6.

Claim 105. (Previously Presented) The method of Claim 104 wherein the skin cells are keratinocytes.

Claim 106. (Cancelled)

Claim 107. (Cancelled)

Claims 108-109. (Cancelled)

Claim 110. (Previously Presented) A method of increasing melanin production in epidermal melanocytes of a mammal, said method comprising topically administering to said epidermal melanocytes an effective amount of a composition comprising at least one oligonucleotide, wherein the oligonucleotide has a phosphodiester backbone, and wherein the oligonucleotide has a nucleotide sequence consisting of SEQ ID NO: 1, SEQ ID NO: 2; SEQ ID NO:3 or SEQ ID NO:4.

Claim 111. (Previously Presented) A method of inhibiting growth of malignant skin cells in a mammal, said method comprising topically administering to the skin cells an effective amount of a composition comprising at least one oligonucleotide comprising a phosphodiester backbone, wherein the oligonucleotide consists of a sequence selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 6 and pTpT.

Claim 112. (Previously Presented) A method of treating hyperproliferative disease affecting epithelial cells in a mammal, comprising administering by aerosol to the epithelial cells an effective amount of a composition comprising at least one DNA oligonucleotide comprising a phosphodiester backbone,

wherein the oligonucleotide has a nucleotide sequence consisting of SEQ ID NO: 1, SEQ ID NO:6 or pTpT.

Claim 113. (Previously Presented) A method of treating inhibiting growth of epithelial carcinoma cells in a mammal, comprising administering to the epithelial carcinoma cells an effective amount of a composition comprising at least one DNA oligonucleotide comprising a phosphodiester backbone, wherein the oligonucleotide has a nucleotide sequence consisting of SEQ ID NO: 1, SEQ ID NO:6 or pTpT.